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Exercise - I (Conceptual Questions) Build Up Your Understanding

1. Which is not a renewable source
(1) Forest (2) Coal
(3) Water (4) Forest organism

2. Noosphere is synonyms of
(1) Environment (2) Atmosphere
(3) Hydrosphere (4) Stratosphere

3. When biosphere turns into human dominated environment it is called
(1) Noosphere (2) Troposphere
(3) Mesosphere (4) Man sphere

4. The living organisms on or around the earth consitute
(1) Biome (2) Biosphere
(3) Community (4) Biocoenosis

5. What is the correct sequence of atmospheric layers starting from earth
(1) Stratosphere troposphere, mesosphere, thermosphere
(2) Troposphere, startosphere, mesosphere, thermosphere
(3) Mesosphere, troposphere, stratosphere, thermosphere
(4) Thermosphere, mesophere, stratosphere, troposphere

6. On earth all living organisms constitute
(1) Community (2) Biome
(3) Association (4) Biosphere

7. Which of the following is the non conventional source of energy
(1) Coal
(2) Petroleum
(3) Electricity from nuclear power plant
(4) Solar radiations

8. Petroleum resource is
(1) Renewable
(2) Non renewable
(3) Synthetic & biodegradable
(4) Infinite & unconventional

9. The main aim of plant conservation is -
(1) To conserve the necessary ecological activities and life supporting systems
(2) To conserve species diversity and range of genetic meterial
(3) Both the above
(4) None of the above

10. Which will not cause any atmospheric pollution
(1) Hydrogen (2) Sulphur dioxide
(3) Carbon dioxed (4) Carbon monoxide

11. Which of the following is the main factor of water pollution
(1) Smoke (2) Industrial waste
(3) Detergent (4) Ammonia

12. Main air pollutant among the following is
(1) CO (2) CO_2
(3) N_2 (4) Sulphur

13. Which is more important for water pollution
(1) Sound (2) SO_2
(3) Salts of arsenic (4) Sewage

14. Pollution can be controlled by
(1) Sewage treatment
(2) Checking atomic blasts
(3) Manufacturing electrically operated vehicles
(4) All the above

15. In cities like Mumbai and Kolkata the major air pollutants are
(1) Ozone
(2) Carbon monoxide and oxides of Sulphur
(3) Hydrocarbons and not air
(4) Algal spores and marsh gas

16. Which is the greatest air pollutant these days
(1) Factories
(2) Motor vehicles
(3) Domestic appliances
(4) animals

17. Removal of the soil by the action of wind and water is known as
(1) Erosion (2) Fossilization
(3) Leaching (4) Calcification

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18. Acid rain occure due to atmospheric pollution of
(1) SO_2 (2) NH_3
(3) CO_2 (4) N_2O

19. Photochemical smog was first observed in -
(1) London (2) Los Angeles
(3) Paris (4) Tokyo

20. Ozone layer of upper atmosphere is being destroyed by
(1) Sulphurdioxide
(2) Carbondioxide
(3) Chlorofluorocarbon
(4) Smog

21. Most hazardous metal pollutant of automobile exhaust is
(1) Hg (2) Cd (3) Pb (4) Cu

22. SO_2 pollution is indicated by
(1) Grasses
(2) Mosses
(3) Lichens
(4) Fossils

23. B.O.D. is connected with
(1) Organic matter (2) Microbes
(3) Both (1) and (2) (4) None

24. Acid rain is due to increase in atmospheric concentration of
(1) Ozone and dust (2) CO_2 and CO
(3) SO_3 and CO (4) SO_2 and NO_2

25. Soil erosion is greater when
(1) No rain occurs
(2) Winds do not blow
(3) The rainfall is evenly distributed
(4) The Rainfall is received in heavy down pour

26. Soil erosion can be prevented by
(1) Over grazing
(2) Removal of vagetation
(3) Afforestation (Plantation)
(4) Increasing bird population

27. Soil conservation is the process where
(1) Soil is aerated
(2) Soil erosion is allowed
(3) Soil is protected against loss
(4) Sterile soil is converted into fertile soil

28. Ether and benzene can be separated by :-
(1) Filtration (2) Distillation
(3) Crystallization (4) Sublimation

EXERCISE-I (Conceptual Questions) ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	**2**	**1**	**1**	**2**	**2**	**4**	**4**	**2**	**1**	**1**	**2**	**1**	**3**	**4**	**2**
Question	16	17	18	19	20	21	22	23	24	25	26	27	28		
Answer	**2**	**1**	**1**	**2**	**3**	**3**	**3**	**3**	**4**	**4**	**3**	**3**	**2**		

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Exercise - II (Previous Year Questions) AIPMT/NEET

AIPMT 2008

1. An organic compound contains carbon, hydrogen and oxygen. Its elemental analysis gave C, 38.71% and H, 9.67%. The empirical formula of the compound would be :-
(1) CHO (2) CH_4O (3) CH_3O (4) CH_2O

AIPMT Pre.-2011

2. Which one of the following statement is not true ?
(1) pH of drinking water should be between 5.5–9.5
(2) Concentration of DO below 6 ppm is good for the growth of fish
(3) Clean water would have BOD value of less then 5 ppm
(4) Oxides of sulphur, nitrogen and carbon are the most widepread air pollutant

3. In Dumas' method of estimation of nitrogen 0.35g of an organic compound gave 55 mL of nitrogen collected at 300 K temperature and 715 mm pressure. The percentage compostion of nitrogen in the compound would be :
(Aqueous tension at 300 K = 15 mm)
(1) 15.45 (2) 16.45 (3) 17.45 (4) 14.45

4. The Lassaigne's extract is boiled with conc HNO_3 while testing for the halogens. By doing so it :-
(1) Decomposes Na_2S and NaCN, if formed
(2) Helps in the precipitation of AgCl
(3) Increases the solubility product of AgCl
(4) Increases the concentration of NO_3^- ions

AIPMT Pre.-2012

5. Which one of the following statements regarding photochemical smog is not correct?
(1) Photochemical smog is formed through photochemical reaction involving solar energy
(2) Photochemical smog does not cause irritation in eyes and throat.
(3) Carbon monoxide does not play any role in photochemical smog formation
(4) Photochemical smog is an oxidising agent in character

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AIPMT 2014

6. Which one of the following is **not** a common component of Photochemical Smog?
(1) Ozone
(2) Acrolein
(3) Peroxyacetyl nitrate
(4) Chlorofluorocarbons

7. In the Kjeldahl's method for estimation of nitrogen present in a soil sample, ammonia evolved from 0.75 g of sample neutralised 10 mL of 1 M H_2SO_4. The percentage of nitrogen in the soil is :
(1) 37.33 (2) 45.33 (3) 35.33 (4) 43.33

AIPMT 2015

8. In Duma's method for estimation of nitrogen, 0.25 g of an organic compound gave 40 mL of nitrogen collected at 300 K temperature and 725 mm pressure. If the aqueous tension at 300 K is 25 mm, the percentage of nitrogen in the compound is :-
(1) 18.20 (2) 16.76 (3) 15.76 (4) 17.36

NEET(UG) 2017

9. The most suitable method of separation of 1 : 1 mixture of ortho and para-nitrophenols is :
(1) Chromatography (2) Crystallisation
(3) Steam distillation (4) Sublimation

10. Which of the following is a sink for CO ?
(1) Micro organism present in the soil
(2) Oceans
(3) Plants
(4) Haemoglobin

NEET(UG) 2018

11. Which oxide of nitrogen is ***not*** a common pollutant introduced into the atmosphere both due to natural and human activity ?
(1) N_2O_5 (2) NO_2
(3) N_2O (4) NO

NEET(UG) 2019

12. Among the following, the one that is **not** a green house gas is :-
(1) Nitrous oxide (2) Methane
(3) Ozone (4) Sulphur dioxide

NEET(UG) 2020

13. Paper chromatography is an example of:
(1) Column chromatography
(2) Adsorption chromatography
(3) Partition chromatography
(4) Thin layer chromatography

14. Which of the following is **not** correct about carbon monoxide?
(1) It is produced due to incomplete combustion
(2) It forms carboxyhaemoglobin
(3) It reduce oxygen carrying ability of blood
(4) The carboxyhaemoglobin (haemoglobin bound to CO) is less stable than oxyhaemoglobin.

NEET(UG) 2020 (COVID-19)

15. Which of the following statement is **NOT** true about acid rain ?
(1) It is due to reaction of SO_2, NO_2 and CO_2 with rain water
(2) Causes no damage to monuments like Taj Mahal.
(3) It is harmful for plants.
(4) Its pH is less than 5.6

16. A liquid compound (x) can be purified by steam distillation only if it is
(1) Steam volatile, immiscible with water
(2) Not steam volatile, miscible with water
(3) Steam volatile, miscible with water
(4) Not steam volatile, immiscible with water

NEET(UG) 2021

17. Match **List-I** with **List-II** :

List-I	**List-II**
(a) $2SO_2(g) + O_2(g) \rightarrow 2SO_3(g)$	(i) Acid rain
(b) $HOCl(g) \xrightarrow{h\nu} \overset{\bullet}{O}H + \overset{\bullet}{Cl}$	(ii) Smog
(c) $CaCO_3 + H_2SO_4 \rightarrow CaSO_4 + H_2O + CO_2$	(iii) Ozone depletion
(d) $NO_2(g) \xrightarrow{h\nu} NO(g) + O(g)$	(iv) Tropospheric pollution

Choose the **correct** answer from the options given below.
(1) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)
(2) (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)
(3) (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)
(4) (a)-(iii), (b)-(ii), (c)-(iv), (d)-(i)

EXERCISE-II (Previous Year Questions) ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	**3**	**2**	**2**	**1**	**2**	**4**	**1**	**2**	**3**	**1**	**1**	**4**	**3**	**4**	**2**
Question	16	17													
Answer	**1**	**3**													

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Exercise – III (Analytical Questions) Master Your Understanding

1. The term biosphere is used for the zone of the earth where life exists
(1) On the lithospere
(2) In the hydrosphere
(3) In the lithosphere and hydrosphere
(4) In the lithosphere, hydrosphere and atmosphere

2. The population of India is 15% of the world but its annual energy consumption is only
(1) 0.2% (2) 2.0% (3) 10% (4) 25%

3. Environmental laning organisation is
(1) CSIR (2) CEPHERI
(3) ICAR (4) NEERI

4. Which of the following atmospheric pollutants is not produced by the exhaust of motor vehicle in Delhi
(1) SO_2
(2) Hydrocarbon gases
(3) Fly ash
(4) CO

5. If water pollution continues at its present rate, it will eventually
(1) Stop water cycle
(2) Prevent precipitation
(3) Make oxygen molecules unavailable to water plants.
(4) Make nitrate molecules unavailable to water plants.

6. Recent reports of acid rains industrial cities are due to the effect of atmospheric pollution by
(1) Excessive release of NO_2 and SO_2 by burning of fossil fuels.
(2) Excessive release of CO_2 by burning of fuel like wood and charcoal, cutting of forests and increased animal population.
(3) Excessive release of NH_3 by industrial plants and coal gas.
(4) Excessive release of CO in atmosphere by incomplete combustion of coke, charcoal and other carbonaceous fuels in pancity of oxygen.

7. Pollution is a change in physical, chemical or biological characters of our land and water that may be
(1) Desirable and harmful to human
(2) Desirable and useful to human
(3) Undesirable and harmful to human
(4) undesirable and useful to human

8. An increase in CO_2 concentration in the atmosphere will result in
(1) Adverse effects of natural vegetation
(2) Global warming
(3) Temperature decrease in global atmosphere
(4) Genetic disoders in plants and animals

9. Identify the incorrect statement from the following:-
(1) Oxides of nitrogen in the atmosphere can cause the depletion of ozone layer
(2) Ozone absorbs the intense ultraviolet radiation of the sun
(3) Depletion of ozone layer is because of its chemical reactions with chlorofluoro alkanes
(4) Ozone absorbs infrared radiation

10. Match the column :-

Column-I Metal / Ion		**Column-II** Maximum prescribed concentration in drinking water	
(a)	Pb	(p)	0.005 ppm
(b)	Cd	(q)	50 ppm
(c)	NO_3^-	(r)	50 ppb
(d)	Fe	(s)	0.2 ppm

(1) a = r, b = p, c = s, d = q
(2) a = p, b = q, c = s, d = r
(3) a = r, b = p, c = q, d = s
(4) a = s, b = p, c = s, d = r

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11. Match the column :-

Column-I Atomic/molecular species		Column-II	
(a)	$Cl^{\bullet}$	(p)	Algae bloom
(b)	F^-	(q)	Promote oxidation of SO_2
(c)	H_2O_2	(r)	Initiate chain reaction for ozone depletion
(d)	PO_4^{-3}	(s)	Hardening the enamel on the surface of teeth

(1) a = q, b = p, c = r, d = s
(2) a = r, b = s, c = q, d = p
(3) a = r, b = s, c = p, d = q
(4) a = s, b = r, c = q, d = p

12. Match the column :-

Column-I (Air Pollutant)		Column-II (Effect on environment)	
(a)	SO_2	(p)	Carcinogenic
(b)	CO_2	(q)	Stiffness in flower buds
(c)	NO_2	(r)	Global warming
(d)	Hydrocarbons	(s)	Harmful to various textile fibres and metals

(1) a = r, b = q, c = s, d = p
(2) a = p, b = r, c = q, d = s
(3) a = q, b = r, c = s, d = p
(4) a = s, b = r, c = q, d = p

13. Match the column :-

Column-I (Compound)		Column-II (Uses)	
(a)	Organo-phosphate	(p)	Biodegradable Pesticide
(b)	Na_3AsO_3	(q)	Herbicides
(c)	Liquefied CO_2	(r)	Dry cleaning
(d)	Cl_2	(s)	Bleaching agent for paper

(1) a = p, b = r, c = q, d = s
(2) a = q, b = s, c = r, d = p
(3) a = q, b = p, c = r, d = s
(4) a = p, b = q, c = r, d = s

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14. Match the column :-

Column-I		Column-II	
(a)	$ClONO_2 + H_2O \rightarrow HOCl + HNO_3$	(p)	Chlorine sink
(b)	$Cl^{\bullet} + CH_4 \rightarrow \dot{C}H_3 + HCl$	(q)	Polar stratospheric cloud
(c)	$HOCl \rightarrow \dot{O}H + \dot{C}l$	(r)	Photochemical smog
(d)	$3CH_4 + 2O_3 \rightarrow 2HCHO + 3H_2O$	(s)	Photolysis

(1) a = q, b = s, c = r, d = p
(2) a = q, b = p, c = s, d = r
(3) a = s, b = p, c = q, d = r
(4) a = p, b = q, c = s, d = r

15. Photochemical smog occurs in warm, dry and sunny climate. The component of this smog are–

(A) O_3

(B) $CH_3-\overset{\overset{O}{\|}}{C}-O-O-NO_2$

(C) $CH_2=CH-\overset{\overset{O}{\|}}{C}-H$

(D) $H-\overset{\overset{O}{\|}}{C}-H$

(1) A & D are correct
(2) A, B, C and D are correct
(3) B, C and D are correct
(4) A, B and D are correct

16. Given below are two statements:
Statement-I : Troposphere extend upto height of ~ 10 km from mountain.
Statement-II : Troposphere is a turbulent dusty zone containing air and little water vapour.
In the light of the above statements, choose the most appropriate answer from the options given below:
(1) Statement-I is correct & statement-II is incorrect
(2) Statement-I and statement-II are incorrect
(3) Statement-I and statement-II both are correct
(4) Statement-I is incorrect & statement-II is correct

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17. Given below are two statements:
Statement-I : High concentration of SO_2 leads to stiffness of flower buds which eventually fall off from plants.
Statement-II : Particulate matter in polluted air, ozone and hydrogen peroxide enhance oxidation of SO_2.
In the light of the above statements, choose the most appropriate answer from the options given below:
(1) Statement-I is correct & statement-II is incorrect
(2) Statement-I and statement-II are incorrect
(3) Statement-I and statement-II both are correct
(4) Statement-I is incorrect & statement-II is correct

18. Given below are two statements:
Statement-I : Rate of production of NO_2 from NO is faster in stratosphere comparative to troposphere.
Statement-II : Lower concentration of NO_2 damage the leaves of plants and retard the rate of photosynthesis.
In the light of the above statements, choose the most appropriate answer from the options given below:
(1) Statement-I is incorrect & statement-II is correct
(2) Statement-I is correct and statement-II is incorrect
(3) Statement-I and statement-II both are correct
(4) Statement-I and statement-II both are incorrect

19. Given below are two statements:
Statement-I : Ozone is a toxic gas, it is component of green house gas and photochemical smog.
Statement-II : Ozone promote oxidation of nitric oxide.
In the light of the above statements, choose the most appropriate answer from the options given below:
(1) Statement-I is correct and statement-II is incorrect
(2) Statement-I and statement-II both are incorrect
(3) Statement-I is incorrect & statement-II is correct
(4) Statement-I and statement-II both are correct

20. Given below are two statements:
Statement-I : Hydrocarbons present in polluted air cause shedding of flower, leaves and twigs.
Statement-II : Hydrocarbons in polluted air are carcinogenic.
In the light of the above statements, choose the most appropriate answer from the options given below:
(1) Statement-I and statement-II both are incorrect
(2) Statement-I and statement-II both are correct
(3) Statement-I is correct and statement-II is incorrect
(4) Statement-I is incorrect & statement-II is correct

21. Given below are two statements:
Statement-I : Carboxyhaemoglobin is about 300 times more stable than the oxygenhaemoglobin complex.
Statement-II : In blood when concentration of carboxyhaemoglobin reaches about 30-40%, then oxygen carrying capacity of blood slightly reduced.
In the light of the above statements, choose the most appropriate answer from the options given below:
(1) Statement-I is correct and statement-II is incorrect
(2) Statement-I is incorrect & statement-II is correct
(3) Statement-I and statement-II both are incorrect
(4) Statement-I and statement-II both are correct

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22. Given below are two statements:

Statement-I : Glass is transparent to solar radiation but opaque to infrared radiations (thermal region), it partly reflect and partly absorb these radiations.

Statement-II : Carbondioxide, nitrous oxide, water vapour, ozone and CFCs are green house gases.

In the light of the above statements, choose the most appropriate answer from the options given below:

(1) Statement-I and statement-II both are correct

(2) Statement-I is incorrect & statement-II is correct

(3) Statement-I is correct and statement-II is incorrect

(4) Statement-I and statement-II both are incorrect

23. **Statement-I :** The main component of catalytic converter (used in car) is ceramic honeycomb coated with precious metal - Pb, Pt and Rh.

Statement-II : The exhaust gases containing unburnt fuel, CO and NO_x, when pass through the converter at 573 K, are converted into CO_2 and N_2.

In the light of the above statements, choose the most appropriate answer from the options given below:

(1) Statement-I is incorrect & statement-II is correct

(2) Statement-I is correct and statement-II is incorrect

(3) Statement-I and statement-II both are incorrect

(4) Statement-I and statement-II both are correct

24. Given below are two statements:

Statement-I : Particulate pollutants bigger than 5 microns are likely to lodge in the nasal passage, whereas particles of about 10 microns enter into lungs easily.

Statement-II : Smoke, dust and mist behave as particulate pollutants.

In the light of the above statements, choose the most appropriate answer from the options given below:

(1) Statement-I and statement-II both are incorrect

(2) Statement-I is correct and statement-II is incorrect

(3) Statement-I and statement-II both are correct

(4) Statement-I is incorrect & statement-II is correct

25. Given below are two statements:

Statement-I : Chlorine sink which contain $ClONO_2$ and HCl form in spring season.

Statement-II : Polar stratospheric cloud form in winter season.

In the light of the above statements, choose the most appropriate answer from the options given below:

(1) Statement-I is correct and statement-II is incorrect

(2) Statement-I is incorrect & statement-II is correct

(3) Statement-I and statement-II both are correct

(4) Statement-I and statement-II both are incorrect

26. Given below are two statements:

Statement-I : Photochemical smog is oxidising smog, it occurs in warm and humid climate.

Statement-II : Plantation of Pinus, Juniparus pyrus and vitis help in controlling photochemical smog.

In the light of the above statements, choose the most appropriate answer from the options given below:

(1) Statement-I and statement-II both are incorrect

(2) Statement-I is correct and statement-II is incorrect

(3) Statement-I is incorrect & statement-II is correct

(4) Statement-I and statement-II both are correct

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27. Given below are two statements:

Statement-I : Excess sulphate in drinking water can cause disease such as methemoglobinemia (Blue baby syndrome)

Statement-II : Prescribed concentration of SO_4^{2-} in drinking water is more than 500 ppm.

In the light of the above statements, choose the most appropriate answer from the options given below:

(1) Statement-I and statement-II both are incorrect

(2) Statement-I is correct and statement-II is incorrect

(3) Statement-I is incorrect & statement-II is correct

(4) Statement-I and statement-II both are correct

28. Given below are two statements; one is labelled as **Assertion (A)** and the other is labelled as **Reason(R)** .

Assertion : Phosphate enrich water inhibit the growth of other living organism in water body.

Reason : It enhance algae growth at water surface and reduce the oxygen concentration in water.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

(1) Both (A) and (R) are correct but (R) is not the correct explanation of (A).

(2) Both (A) and (R) are correct and (R) is the correct explanation of (A).

(3) (A) is correct but (R) is not correct.

(4) (A) is not correct but (R) is correct.

29. Given below are two statements; one is labelled as **Assertion (A)** and the other is labelled as **Reason(R)** .

Assertion : Greater the amount of organic matter in water, greater will be BOD.

Reason : The amount of oxygen required by bacteria to breakdown the organic matter present in a certain volume of a sample of water is called biochemical oxygen demand (B.O.D.)

In the light of the above statements, choose the **most appropriate** answer from the options given below :

(1) Both (A) and (R) are correct but (R) is not the correct explanation of (A).

(2) Both (A) and (R) are correct and (R) is the correct explanation of (A).

(3) (A) is correct but (R) is not correct.

(4) (A) is not correct but (R) is correct.

30. Given below are two statements:

Statement-I : In fractional distillation technique vapour of a liquid mixture are passed through a fractionating column after condensation.

Statement-II : A fractionating column provides many surfaces for heat exchange between the ascending vapours and the descending condensed liquid.

In the light of the above statements, choose the most appropriate answer from the options given below:

(1) Both statement I and statement II are incorrect.

(2) Statement I is incorrect but statement II is correct.

(3) Statement I is correct but statement II is incorrect

(4) Both statements I and statements II are correct.

31. Given below are two statements:

Statement-I : Chromatography extensively used to separate mixtures in to their components, purify compounds but not to test purity of compounds.

Statement-II : In chromatography mixture of substances is applied on to a stationary phase and then moving phase which may be pure solvent, mixture of solvents or a gas is allowed to move slowly over the stationary phase.

In the light of the above statements, choose the most appropriate answer from the options given below:

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(1) Both statement I and statement II are incorrect.
(2) Statement I is incorrect but statement II is correct.
(3) Statement I is correct but statement II is incorrect
(4) Both statements I and statements II are correct.

32. Given below are two statements:

Statement-I : Paper chromatography is a type of adsorption chromatography.

Statement-II : Chromatography paper contains water trapped in it, which acts as the stationary phase.

In the light of the above statements, choose the most appropriate answer from the options given below:

(1) Both statement I and statement II are incorrect.
(2) Statement I is incorrect but statement II is correct.
(3) Statement I is correct but statement II is incorrect
(4) Both statements I and statements II are correct.

33. Given below are two statements; one is labelled as **Assertion (A)** and the other is labelled as **Reason(R)** .

Assertion : In duma's method the mixture of gases which is produced for estimation of nitrogen is collected over aqueous solution of potassium hydroxide.

Reason : In duma's method compound is heated with copper oxide in an atmosphere of carbondioside and potassium hydroxide absorbs CO_2.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

(1) Both (A) and (R) are correct and (R) is the correct explanation of (A).
(2) Both (A) and (R) are correct but (R) is not the correct explanation of (A).
(3) (A) is correct but (R) is not correct.
(4) (A) is not correct but (R) is correct.

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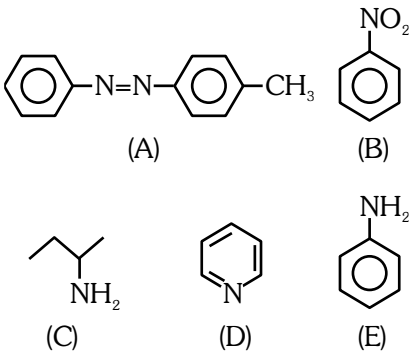
34. For which of the following compounds Kjeldahl method is not used for estimation of nitrogen ?



(1) A, B, D and E
(2) A, B and D
(3) A and D
(4) D and E

35. Match the column :-

Column-I Nature of compound/ impurity		**Column-II** Purification technique	
(a)	Liquids having sufficient difference in boiling point	(p)	Fractional distillation
(b)	Difference of boiling points of liquids is not much.	(q)	Distillation
(c)	Compounds which decompose at or below their boiling point	(r)	Steam distillation
(d)	Substances which are steam volatile and are immiscible with water	(s)	Distillation under reduced pressure

(1) a = q, b = p, c = r, d = s
(2) a = p, b = q, c = s, d = r
(3) a = q, b = p, c = s, d = r
(4) a = p, b = q, c = r, d = s

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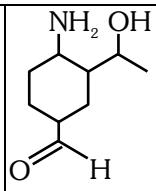
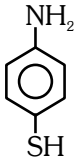
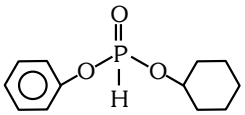
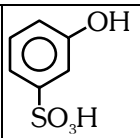
36. Match the column :-

Column-I Test product for element detection		**Column-II** Colour	
(a)	$[Fe(CN)_5NOS]^{4-}$	(p)	Prussian blue
(b)	$[Fe(SCN)]^{2+}$	(q)	Blood red
(c)	$(NH_4)_3PO_4 \cdot 12MoO_3$	(r)	Violet
(d)	$Fe_4[Fe(CN)_6]_3 \cdot xH_2O$	(s)	Yellow

(1) a = q, b = s, c = r, d = p
(2) a = p, b = q, c = r, d = s
(3) a = q, b = r, c = s, d = p
(4) a = r, b = q, c = s, d = p

37. Match the column :-

Column-I (Compound)		**Column-II** (Observe test)	
(a)		(p)	Oxidised product gives yellow precipitate with HNO_3 followed by $(NH_4)_2MoO_4$
(b)		(q)	Sodium fusion extract gives blood red colour with Fe^{+3}
(c)		(r)	Sodium fusion extract gives black precipitate with $(CH_3COO)_2Pb$
(d)		(s)	Sodium fusion extract gives blue colour when treat with $FeSO_4$ followed by heating with conc. H_2SO_4

(1) a = q, b = s, c = p, d = r
(2) a = s, b = q, c = p, d = r
(3) a = r, b = p, c = q, d = s
(4) a = s, b = p, c = q, d = r

38. Match the column :-

Column-I (Method of detection/estimation of element)		**Column-II** (Final form of element in compound)	
(a)	Kjeldahl's method	(p)	NH_3
(b)	Carius method	(q)	NaCN
(c)	Dumas method	(r)	N_2
(d)	Lassaigne's test	(s)	AgCl

(1) a = r, b = p, c = r, d = s
(2) a = q, b = p, c = r, d = s
(3) a = p, b = s, c = r, d = q
(4) a = r, b = s, c = p, d = q

EXERCISE-III (Analytical Questions) ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	**4**	**2**	**4**	**3**	**3**	**1**	**3**	**2**	**4**	**3**	**2**	**3**	**4**	**2**	**2**
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	**2**	**3**	**2**	**4**	**2**	**1**	**1**	**1**	**3**	**2**	**3**	**1**	**4**	**4**	**2**
Question	31	32	33	34	35	36	37	38							
Answer	**2**	**2**	**1**	**2**	**3**	**4**	**2**	**3**							

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Important Notes